



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/868,241

08/28/2001

Timothy M Coker

124-861

7076

23117

7590

10/29/2003

NIXON & VANDERHYE, PC  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201-4714

EXAMINER

DINH, DUC Q

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 10/29/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/868,241

Applicant(s)

COKER ET AL.

Examiner

DUC Q DINH

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "the number of 0 and the number of 1 are brought closer to equality... dc balance " in claims 1-3, 5-6, 12-15 is a relative term which renders the claim indefinite. The term " The number of 0 and the number of 1 are brought closer equality... dc balance" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. For example it is not clear the difference between the number of ones and the number of zeros is considered to be closer to equality; i.e.: the number of "1s" is four and the number of "0s"s is 3, so the numbers are considered closer to equality? What about the difference is two or three.

The examiner examines the application based on the best understood of the claim language.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2674

3. Claims 1-3, 6 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (U. S. Patent No. 4,775,891), hereinafter Aoki.

In reference to claims 1-3 and 15, Aoki discloses a liquid crystal display comprising: the LCD panel 12 (containing the array of light modulated pixels); a sync separator 1 separates horizontal and vertical sync signals from a video signal supplied from a prestage video amplifier (not shown) and feeds the separated sync signals to a synchronization control circuit 2. An A/D (analog-to-digital) converter 3 converts the video signal from the video amplifier noted above into a 4-bit digital signal 0.sub.1 -O.sub.4 to be fed to a data control circuit 4 (corresponding to the drive means) arranged to drive the LCD panel to write a complete image signal representing a set of n-digit binary numbers defining the intensities of respective pixel of the LCD by a weighted-bit plane technique (See Fig. 1 and 3) alter the n-digit number in respect of at least one of the pixel to a closely adjacent value so the numbers of 1s and 0s are brought closer to equality as shown in Fig. 4 row 9: 0111 (data input) are brought closer to 011 or 110.

In reference to claims 12-14, see the rejection as applied to claims 1-3. In addition, Aoki discloses in row 8 of Fig.3 that the inequality of 1s and 0s is at least reduced and any inequality of 1s and 0s at each of other pixel is left unchanged, reduced or removed as claimed.

In reference to claim 6, Aoki discloses the data control circuit 4 that provide data D1-D3 of two different values as the data control signal is inverted to "0" or "1" according to the data O1-O4 from the A/D converter as shown in Fig. 3 (col. 22-27).

Art Unit: 2674

***Allowable Subject Matter***

Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

None of the reference cited art teaches or suggests the driving means for and light modulating apparatus is arranged so that the numbers of 1s and 0s written at the at least one pixel are brought to equality as claimed.

***Response to Arguments***

4. Applicant's arguments, see 9-15, filed July 17, with respect to claim 11-15 have been fully considered and are persuasive. The rejection of claims 1-3,5-6 and 12-15 under 112 first paragraph has been withdrawn. However, the 112 rejection second paragraph has been maintained to those claims as indicated in this Office Action.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2674

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached form PTO 892.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **DUC Q DINH** whose telephone number is **(703) 306-5412**. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on **(703) 305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivery response should be brought to: Crystal Park II, 2121 Crystal Drive,  
Arlington, Va Sixth Floor (Receptionist)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.

Application/Control Number: 09/868,241

Page 6

Art Unit: 2674


DUC Q DINH

Examiner

Art Unit 2674

DQD

October 11, 2003



RICHARD WIERPE  
SUPERVISORY EXAMINER  
TECHNOLOGY CENTER